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Chemical Effects in the Corrosion of Aluminum and Aluminum Alloys

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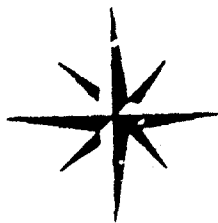
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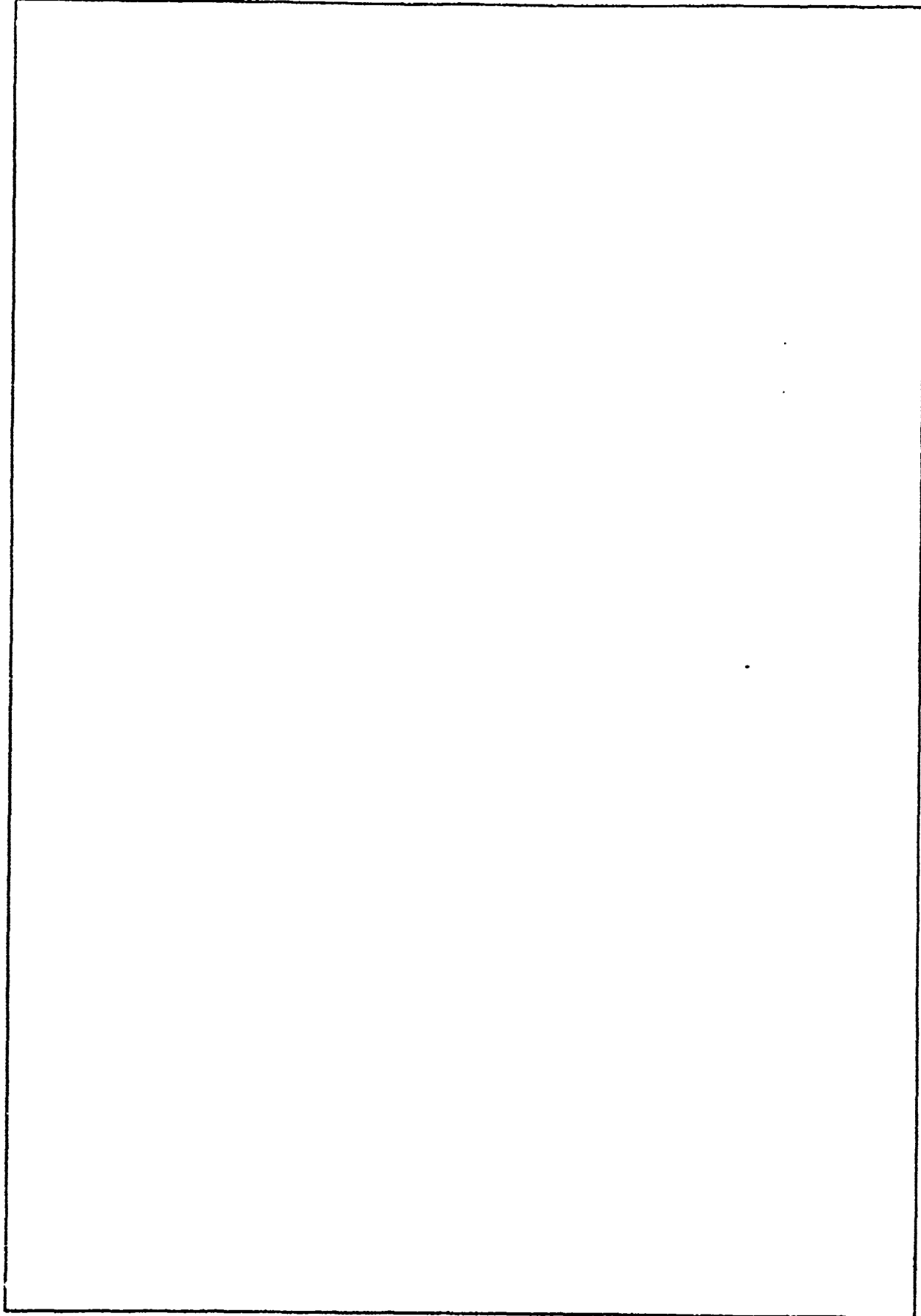
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"CHEMICAL EFFECTS IN THE CORROSION OF ALUMINUM AND
ALUMINUM ALLOYS"

A Bibliography

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Bibliography of Literature on Chemical Effects
in the Corrosion of Aluminum and Aluminum Alloys

Introduction

In 1969 a bibliography of the literature on chemical effects in the corrosion of aluminum and aluminum alloys was issued by this Laboratory. In that first survey the literature from the year 1913 and through the year 1968 was critically examined, specifically with reference to information on the influence of anions and other chemical species on the corrosion of aluminum. This first search served the basis for experimental investigations that have been conducted in our Laboratory from that year up to the present.

With this bibliography the literature is covered from 1968 through 1975. Thus the present search overlaps the first.

In the present bibliographic review, considerable attention is given to corrosion inhibitors, again to support experimental work being conducted in the Laboratory. An effort has been made to do some evaluation, that is, not all of the available references were included, only those, in the Author's opinion that offer pertinent information or would lead to sources that would be of value to the corrosion program.

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 Data covering a 7-year period are presented on the corrosion behavior of 11 Al test alloys at 4 test sites.
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 "Aluminum Corrosion: Possible Mechanisms of Inhibition"
 The corrosion of Al in a closed ethylene glycol/water system.
- 1968-3 William B. Brooks
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 Hazards of traces of Hg on the corrosion of metal and alloys in the process industries.
- 1968-4 Dora M. Brasher
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 "Mechanism Of The Inhibition Of Corrosion"
 Development of a corrosivity scale based on the theoretical treatment of anions in solution.
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 "Effect Of Initial Weather Conditions On The Atmospheric Corrosion Of Aluminum And Its Alloys"
 Effects of moderately-severe industrial and marine atmosphere on four Al alloys.
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 Results of six-year atmosphere exposure tests of four Al alloys at five sites in England.
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 "Evaluation And Comparison Of The Corrosion Susceptibilities Of 7178 Aluminum Plate Material Of Various Tempers"
 Evaluation of the resistance of plate material of 7178 Al alloy in T651 and T7651 tempers to exfoliation and stress-corrosion cracking.
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 Compilation of data relating to the atmospheric corrosion of Al from 39 regions of 10 countries of America, Europe, Africa and Asia.

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 Use of N, N-dimethylcyclohexylamine as a corrosion inhibitor of Al.
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 Protective action of water on the surfaces of metals in fric-
 tion-lubrication, and wear processes.
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 "Corrosion Of Aluminum By Water. An Approach From The Theory
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 The corrosion-immunity-passivation diagram, the metal-potential
 of aq. system-pH diagram, and the Al-potential of aq. system-
 pH diagram are discussed.
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 The corrosion behavior of Al in pure water and in many kinds
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 "Effect Of Minor Impurities In Water On The Corrosion Of Aluminum"
 Corrosion characteristics of commercial-pure Al immersed in water
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 Review of inhibitors for corrosion prevention and microbial in-
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 Effects of corrosion inhibitors of aluminum on high-purity alumi-
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 Use of aminopolyalkylene polyphosphonic acids as corrosion inhibitors of Al and its alloys in the presence of H_2SO_4 or H_3PO_4
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 Action of corrosion inhibitors on various metals in mixtures of water and liquid hydrocarbons systems.
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 Summary of the literature of Al corrosion which includes stress-corrosion cracking, microbiol. corrosion and cathodic protection.
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 Corrosion resistance of Al and its alloys in a NaCl medium.
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 Methods of preventing or retarding pit formation on Al in artificial water.
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 Barrier layer thickness of Al which had been subjected to corrosion tests in water contg. a few ppm of various reagents was detd. by the polarization method proposed by M.S. Kunter and P. Fowle. The thickness of the barrier layer formed in air decreased with increasing time of immersion in pure water up to 100 hrs.
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 Protection of metals from acid corrosion using the reaction product of resorcinol or alkylresorcinol with hexamethylene-tetraamine used as the inhibitor.
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 Study of corrosion rates of Al and Al alloys 2S, 3S, and 57S in 1M NaOH with the addition of CaO and Na citrate.
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 "Mechanism Of The Action Of Inhibitors In Atmosphere And In Neutral Media And The Role Of Complexing In Protection Of Metals"
 Evaluation of the effectiveness of 11 complex-forming agents in inhibiting corrosion of Armco-Fe, M-1 Type Cu, Al and Type Ts 1 Zn.
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 Investigation of six anions on the corrosion of Al in 0.1 N Na salt solutions.
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 Corrosion rate of Al in deaerated 3% NaCl solutions at pH 1-7.
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 "Corrosion Of Aluminum As A Function Of The pH Of The Corroding Medium"
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 "Inhibitor Of Aluminum Corrosion In Alkaline Media. II. Effects Of Hydroxycarboxylic Acids On The Corrosion Of Aluminum In Alkaline Media"
 Effects of the addition of hydroxycarboxylic acids to aq. alk. solns. as chelating agents on the corrosion of Al.
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 "Aspects Of Corrosion Research"
 A review with 72 references of fundamental and corrosion prevention studies on Al, its alloys and mild steel in acid and alkaline media.
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 "Corrosion Rates Of Structural Metals In Sea Water, Fresh Water, And Tropical Atmospheres. Summary Of A Sixteen-Year Exposure Study"
 A summary is presented of a 16-year exposure trial on 52 structural metals and alloys in 5 uncontaminated natural environments.
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 The influence of tartrate ions in alk. solns. during the anodic polarization and corrosion behavior of com. Al.
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 The inhibition of corrosion of Al (99.8%) and Al-Mg (2%) alloy in decinormal solutions of trichloroacetic acid by different inhibitors.
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 "Quantitative Evaluation Of Atmospheric Corrosion Rate Of Aluminum By Microbrightness Change"
 Estimation of rate of atmospheric corrosion of aluminum by changes in the microbrightness of the surface.

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Mechanism of $\text{Al} + \text{H}_2\text{O}$ reaction, Al ions and electrons are removed in sep. steps at different sites on the surface.
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"Electrochemical Behavior Of Hexacyanoferrate (III) In Dilute NaOH And Its Corrosion-Inhibiting Effect For Aluminum"
Potentiostatic studies and chemical analysis of hexacyanoferrate (III) on 52S, 257S aluminum alloys and pure aluminum (99.50%).

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 Dissolution of Al in 2-4N HCl and 0.5-3N NaOH in the presence alkylamine and alkylammonium ions.
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 Detailed review of action mechanism of corrosion inhibition in terms of three systems: inhibitor-acid, metal-acid and metal-inhibitor.
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 Intergranular corrosion of pure Al bicrystals in water with symmetrical bending around $\langle 001 \rangle$ and $\langle 011 \rangle$.
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 Corrosion of steels (Kh17, St. 3, 1Kh18N9T) and Fe-Cr-Mn, Al, and Ti alloys
- 1972-21 Y. Li, S. Chen and C. Huang
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 "Corrosion Test Of Aluminum & Aluminum Alloys In Sea Water"
 Corrosion of Al and its alloys in underground areas in the presence of water, oil or steam at 150° .
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 "Cathodic Processes Parameters Of The Protection Of Aluminum & Its Alloys In Sea Water"

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 Corrosion of aluminum by liquid NH_3 and an assessment made of various methods of protection of the material against this form of attack.
- 1972-24 M. Pourbaix
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 "Significance Of Protection Potential In Pitting, Intergranular Corrosion And Stress-Corrosion Cracking"
 Significance of protection potential under conditions of restricted diffusion.
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 "2- Mercaptobenzothiazole As A Corrosion Inhibitor For Cu, Brass And Al In Halogen Substituted Acetic Acid"
 Inhibitive action of 2-mercaptobenzothiazole against the corrosion of Cu, brass and Al in 0.1 N chloro-substituted acetic acid.
- 1972-26 T.L. Rama Char
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 "Corrosion-Resistant Nonferrous Metals And Alloys In The Chemical Industry"
 A review of the corrosion resisting characteristics of the alloys of Ti, Al, Cu, Ni and rarer metals. 160 refs.
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 "Aluminum In Corrosion Prevention By Cathodic Protection"
 A review showing the importance of Al, composition and performance of anode installation, principles and design aspects, recent applications and scope of the method.
- 1972-28 F.M. Rheinhardt, and J.E. Jenkins
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 "Corrosion Of Materials In Surface Sea Water After 12 And 18 Mths. Of Exposure"
 Compilation of data from the immersion of 1150 specimens of 189 different alloys immersed in surface sea water for 12 and 18 months.
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 "Effect Of Temp. On The Pit Formation Potential Of Aluminum And Its Alloys"

- 1972-30 R.M. Saleh and A.A. El Hosary
Prepr. Semin. Electrochem., 13th 1972 226, (1972)
 "Corrosion Inhibition By Naturally Occurring Substances.II. Effect Of Pomegranate Juice And The Aqueous Extract Of Pomegranate Fruits And Tea leaves On The Corrosion Of Aluminum"
 The effect of the juices and tea leaves on the dissolution of Al in 2N HCl and 1.5N NaOH.
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 "Radiotracer Study Of The Adsorption Of Dibutyl Sulfide By Copper, Mild Steel, Zinc And Aluminum In Normal H_2SO_4 ."
 Adsorption of Bu_2S by Cu, mild steel, Zn and Al in N H_2SO_4 using radioactive S.
- 1972-32 N. Subramanyan and M. Krishnan
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 "Corrosion And Anodic Polarization Behaviour Of Aluminum In Sodium Hydroxide Soln Containing Sucrose Or Allied Products With Or Without Calcium"
 The effect of sucrose, glucose, fructose, mannose, and mannitol on the corrosion and anodic polarization of Al-2S in M NaOH in the presence of Ca.
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 "Corrosion Potentials Of Some Common Metals In Oxygenated Solutions In Relation To Semiconductivity Of The Corrosion Films"
 The role of estd. semicond. of corrosion films in the detn of the magnitudes of open-circuit corrosion potentials of Cu, Sn, Al, Ni, Fe, Zn and Pb in Cl⁻ solutions.
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 A review on the anodic behaviour of metals based on thermodynamic, kinetic, and morphological conditions.
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 "Hydrous Oxide Film On Al Immersed In Warm Water"
 Scanning electron microscopy was used to examine films produced on electropolished 99.99% Al immersed in H₂O contg. dissolved O from air at 40°
- 1973-2 T.A. Buraya, I.V. Turkovskaya and Yu. M. Zhuk
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 "Corrosion Of Aluminum And A Mg-3 and A Mts Alloys In Ch⁺ Aque Containing Aqueous Solutions Of Ethylene Glycol"
 An electrochemical evaluation of the corrosion resistance of Al and Al alloys in aq. ethylene glycol solns containing chloride ions.
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 "Use Of Gas Chromatography For Studying The Corrosion Of Metals In Water Of High Temp."
 Use of gas chromatography to study the corrosion of metals in water at high temperatures.
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 "Anticorrosive Protection Methods Based on Metal Passivity Property"
 A review w/43 refs.
- 1973-5 G.P. Cherepanov
Fiz-khim Mekh-Mater., 9, 62-66, (1973)
 "Mechanics Of Corrosion Failure"
 A review is given with 44 refs. on the corrosion of steels, Ti and Al alloys.
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 "Alicyclic Compounds As Corrosion Inhibitors For Aluminum 3S In Hydrochloric Acid"
 Use of alicyclic compounds as inhibitors for Al 3S in HCl.
- 1973-7 M.N. Desai, S.M. Desai, C.B. Shah and Y.B. Desai
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 "Effect Of External Anodic Polarization On The Efficiency Of Corrosion Inhibitors for Al Alloys in HCl"
 An evaluation is given of various inhibitors, mostly amines. for Al alloys in HCl under the influence of ext. anodic pol.
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 "Colloidal Substances As Inhibitors Of Corrosion Of Aluminum 2S And 57S In Acetic Acid And Chloro-Substituted Acetic Acids"
 Use of colloidal substances as corrosion inhibitors for Al in acetic and chloro-substituted acetic acids.

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 "Behavior Of Aluminum At Cathodic Polarization"
 Current-voltage curves of an Al-0.28% Fe alloy and highly pure Al in buffered M NaCl solns.
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 "Pitting Corrosion Of Al In Synthetic Supplemented Water"
 Corrosion behavior of pure Al in water containing Ca^{2+} , Mg^{2+} , HCO_3^- , Cl^- , SO_4^{2-} and free Cl.
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Keikinzoku, 23, 471, (1973)
 "Effects Of Some Ions In Water On The Pit Shape Of Aluminum"
 Effects of some ions in water on the number of corrosion pits and the depths of these pits on Al.
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 "Properties Of The Oxide Layer On Anodized Aluminum Studied Under Corrosion Conditions"
 A method was given for detn. of the thickness of anodized layer on Al (7429-90-5) by measuring the intensity of changes in the diffuse reflected light from the dyed surface.
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Inf. Chim., 123, 93, (1973)
 "Corrosion Inhibitors In Acid Medium"
 The mechanism of acid attack, the mechanism of corrosion inhibition and different types of corrosion inhibitors are discussed.
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 "Scientifica And Technical Problems Of Controlling The Corrosion Of Metals"
 Presentation of the general aspects of scientific and technical problems of metal corrosion in the USSR.
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 Criteria to evaluate materials for electrochem. protection of steel and Al alloy.
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 "Effect Of Some Thio Compounds On The Corrosion Of Aluminum In Hydrochloric Acid Solutions"
 Use of some thio compounds as corrosion inhibitors for 3S Al in 0.5 N HCl.

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 The corrosion inhibiting effects of aldehydes on the corrosion of Al-3S in 0.5 N HCl.
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 "Action Of Thioureas As Corrosion Inhibitors For 3S Aluminum
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 "Inhibitory Action Of Some Organic Thiocompounds Towards 3S
 Aluminum In HCl Solutions"
 The influence of some organic thiocompounds on the corrosion rate of 3S Al in 0.5 N HCl solutions.
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Met. Trans., 4, 2575, (1973)
 "Effect Of Solidification Microstructure On The Corrosion
 Behavior Of A Columnar Al-Cu Alloy"
 Evaluation of the morphology and kinetic nature of corrosion of directionally solidified Al-4.5 wt% Cu.
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Technol., Nagoya, (Japan), (1973)
 "Effect Of Stress And Surface Film On The Anodic Dissolution
 Of Aluminum Alloys"
 The mechanism of anodic dissoln. of various heat treated Al alloys under plastic deformation was examd. in a 1% NH₄ borate soln.
- 1973-22 M.K. Patel and S.C. Makwana
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 "Action Of Phenols On The Corrosion Of 3S Al in HCl Solns"
 The inhibitor effect of some phenols on the corrosion of Al-3S in HCl.
- 1973-23 A.H. Roebuck
 "Corrosion Inhibitors"
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Mizu Shori Gijutsu, 14, 165, (1973)
 "Corrosion And Corrosion Control Of Metals"
 A review.

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"Relations Between The Polarization Characteristics Of
Aluminum Intermetallic Cpds & The Corrosion Morphology
Of Binary Aluminum Alloys"
The potentials of binary Al alloys (Al-0.5% Fe, Al-0.5% Ni,
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Al (99.999% Al) & Al intermetallic cpds.
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Schweiz. Alum. Rundsch., 23, 201-6, (1973)
"Corrosion & Surface Protection Of Aluminum Automatic Machine
Alloys"
The types of corrosion to which Al alloys are subject are re-
viewed. Methods of protection are described with special ref.
to anodizing. Applications of Al alloys in the food industry
are given. No refs.

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 "Corrosion behaviour of aluminum in phosphate solutions"
 The potential of the Al (7429 - 90 - 5) electrode was measured at 30° in 5×10^{-4} M aq. phosphate (14265 -44 -2) solns. as a function of pH and electrolyte concn.
- 1974-2 A. Becerra and R. Darby
Corrosion, 30, 153-60, (1974)
 "Influence of Copper Bicarbonate Ions on the Corrosion of Aluminum Alloy in Saline Solutions"
 Corrosion rate studies of 3 Al. alloys (1100, 5052, 6063) were conducted in saline solns.
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Brit. Corros. J., 9, 108, (1974)
 "Localized Corrosion of Al and its Alloys. I. Critical Potential, E_p , with respect to Pitting "
 Determination of the critical potential for Al and its alloys with Si and Zn in 0.5 M NaCl at pH 2 and pH 6.
- 1974-4 P.L. Bonora, G.P. Ponzano and V. Lorenzelli
Brit. Corros. J., 9, 112, (1974)
 "Localized Corrosion of Aluminum and Its Alloys. II. Influence of Environment"
 Corrosion of Al and its alloys in 0.5 M HCl and 0.5 M NaCl.
- 1974-5 M.N. Desai and R.R. Patel
Trans. Soc. Adv. Electrochem. Sci. Technol. 9, 125, (1974)
 "N-Substituted Anilines as Corrosion Inhibitors for Aluminum -3S in HCl"
 Study of N-substituted anilines as corrosion inhibitors for Indal 3S(11146-15-9) in HCl solns.
- 1974-6 A. Broli, H. Holtan and K.L. Prestrud
Corrosion 30, 427, (1974)
 "Use of Galvanokinetic Methods for the Determination of Characteristic Potentials for Pitting Corrosion on Aluminum"
 Use of galvanokinetic methods to det. the pitting potential and protection potential against pitting for unalloyed Al in a deaerated soln of 3% NaCl at 0° and 30°.
- 1974-7 V.V. Ekilik, V.P. Grigor'ev, G.N. Ekilik and N.M. Gontmakher
Zashch. Metal 10, 325, (1974)
 "Effect of the Nature of a Solvent on the Inhibiting Effect of Some Organic Compounds in HCl-Alcohol Systems"
 Use of pyridine derivatives or perylium perchlorates to inhibit corrosion of Fe, Al and Zn in 0.5-4.0 M HCl.
- 1974-8 F.E. Fallor
Korrosion, 25, 128-32, (1974)
 "Corrosion behaviour of aluminum in sea water and brackish waters with special reference to shipbuilding conditions"
 The importance of the low electro-chem. potential of Al. & phy. chem. properties of Al. oxide on the corrosion resistance of Al. are reviewed with 8 refs.

- 1974-9 H. Fisher
Werkst. Korros., 25, 706-11, (1974)
 "Corrosion inhibition mechanisms as compared to the inhibition mechanisms of other electrode reactions"
 A review with 3 refs.
- 1974-10 R.J. Gesl and A. Troiano
Corrosion, 30, 274-9, (1974)
 "Stress Corrosion and Hydrogen Embrittlement in an Aluminum Alloy"
 A strain aging type of reversible H embrittlement was demonstrated for a high strength Al alloy in a 3% NaCl soln.
- 1974-11 W. Gruhl and F.E. Faller
Z. Werkstofftech., 5, 274-9, (1974)
 "Corrosion & stress corrosion, problems of aluminum structural alloys"
 The corrosion behaviour of several structural alloys of Al. in different media is discussed.
- 1974-12 E.S. Ivanov
Zashch. Metal., 7, 193-4, (1974)
 "Mechanism of the Action of Aminochromates as Inhibitors of the Corrosion of Some Metals"
 Mechanism of the action of aminochromates as inhibitors of the corrosion of steel, Al, Cu, and Cd.
- 1974-13 St. Ivascanu and I. Antonescu
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 "Behaviour of Al in NaOCl Solns"
 Behaviour of aluminum (7429-90-5) in NaOCl solutions.
- 1974-14 M. Izuyama
Kinzoku Hyomen Gijutsu, 25, 310, (1974)
 "Corrosion Inhibitors of Al"
 A review on the corrosion mechanism of Al and classification of corrosion inhibitors.
- 1974-15 T. Jangg, H. Meissner and R. Zuerner
Aluminum Duesseldorf, 50, 205-13, (1974)
 "Pitting Corrosion of Aluminum"
 A new method was developed to determine the so-called breakdown pot. V in the pitting corrosion of Al (7429 - 90 - 5) and Al alloys in NaCl solns. contg. various additives.
- 1974-16 V. Kapali and N. Subramanyan
Proc. Semin. Electrochem. 14th 1973, 368, (1974)
 "Behaviour of Some Ketones and Ethers as Inhibitors of Corrosion of Aluminum in HCl and in NaOH Solution"
 The effectiveness of some ketones and ethers as inhibitors of corrosion of Al(7429 - 90 - 5) in hydroxide soln and in HCl both in the presence and absence of Ca.

- 1974-17 V.P. Kassyura and E.M. Zaretski
Zashch. Metal., 10, 162-4, (1974)
 "Effect Of Magnesium On The Anodic Behavior Of Aluminum Magnesium Alloys In Alkaline Nitrate Solutions"
 Mg effect on the corrosion rate of Al-Mg alloys in alk.-nitrate solns was determined by studying the anodic behavior of this system.
- 1974-18 B.S. Lee, M. Seno and T. Asahara
Kinzoku Hyomen Gijutsu, 25, 398, (1974)
 "Vapor Phase Corrosion Inhibitors. 4. Effects Of Various Sub-Components On The Corrosion-Inhibiting Action Of Hexamethylenetetramine On Aluminum"
 Investigation of vapor-phase corrosion-inhibiting papers, powders, tables and oils for Al.
- 1974-19 R.T. Lawson
Chem. Technol. Div. Anst. J. Chem., 27, 105-27, (1974)
 "Al Corrosion Studies. I. Potential-pH-Temperature Diagrams For Aluminum"
 The potential-pH-temp. relation for the Al-H₂O system were calcd. by the methods of Bethune, Khodakovskiy, Criss & Cobble and Melgeson & a crit. comparison made.
- 1974-20 T.J. Lennox, M.M. Peterson, J.A. Smith and R.E. Groover
Mater. Performance, 13, 31, (1974)
 "Corrosion And Cathodic Protection Of 5086-H32 Aluminum Coupled To Dissimilar Metals"
 Study of corrosion of 5086-H32 aluminum in various environments.
- 1974-21 H. Lommel
Korrosion, 25, 29-34, (1974)
 "Corrosion Behavior And Corrosion Protection Of Light Metal Alloys In Shipbuilding & Similar Applications"
 The corrosion behavior of Al and its alloys in shipbuilding is reviewed with 7 refs. The effect of structure, compn., heat treatment, welding & contact with other metals is considered.
- 1974-22 V.A. Makavov
Itogi Nauki Tekh. Korroz. Zashch. Korros., 3, 84, (1974)
 "Anodic Electrochemical Protection"
 A review w/194 refs.
- 1974-23 A. Maitra and S. Barua
Corros. Sci., 14, 587, (1974)
 "Dicyandiamide. Inhibitor For Acid Corrosion Of Pure Aluminum"
 Inhibition efficiency of dicyandiamide on Al in 0.5-2.0 N HCl at 27° for 1-6 hrs.

- 1974-24 M. Marek and R.F. Hochman
Corrosion, 30, 208-10, (1974)
 "Stimulated Crevice Corrosion Expt. For pH And Solution Chemistry Determination"
 Crevice corrosion in dental amalgam
- 1974-25 T.L. Rama Char
J. Electrochem. Soc. India, 23, 103, (1974)
 "Aluminum. Corrosion And Metal Finishing Bibliography Of Publications"
 A list of 83 papers published from the electrochem. labs of the world covering various aspects of the use of Al(7429-90-5).
- 1974-26 B. Sanyal, et. al.
Indian Chem. Manuf., 12, 13, (1974)
 "Corrosion Of Metal In Different Chemical Environments And Its Protection"
 Corrosion of Al, steels and bronzes in acids, water, sea water, cutting oil emulsions, detergents, petroleum and org. solvents is reviewed.
- 1974-27 R.K. Shah, B.B. Patel and N.K. Patel
J. Inst.Chem. Calcutta, 46, Pt5, 167, (1974)
 "Azoles As Corrosion Inhibitors For 3S Aluminum In Local Supply Water"
 Use of 2-mercaptobenzothiazole and 2-mercaptobenzimidazole as corrosion inhibitors for 3S Al in Gujarat Univ supply water.
- 1974-28 V.S. Sinyavskii, V.D. Val'Kov, G.M. Budov and V.D. Kalinin
Metalloved Term. Obrab. Metal., 6, 25, (1974)
 "Corrosion Resistance Of Al Alloys"
 Statistical study of the corrosion of Al alloys in sea water and in an industrial atm for 5 yrs.
- 1974-29 A. Soudan
Galvano-Organo, 43, 937, (1974)
 "Protection Of Metals And Light Alloys"
 A review is given of industrial Al and Mg alloys and of corrosion and its prevention.
- 1974-30 N. Subramanyan and K. Ramakrishnaiah
Proc. Semin. Electrochem. 14th 1973, 375, (1974)
 "Effect Of Some Amino Acids In The Corrosion Of Al In 1M HCl"
 The influence of 10 amino acids on the corrosion of Al (7429-90-5) in 1 N HCl both in the presence and absence of Cu (7440-90-2).

- 1974-30 N. Subramanyan and K. Ramakrishnaiah
Proc. Semin. Electrochem. 14th 1973, 375, (1974)
 "Effect Of Some Amino Acids In The Corrosion Of Al in 1M HCl"
 The influence of amino acids on the corrosion of Al (7429-90-5) in 1 N HCl both in the presence and absence of Ca (7440-90-2).
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Zairyo, 23, 912, (1974)
 "Corrosion Inhibitors"
 Types of inhibitors and their applications in various chem. and environmental processes are reviewed.
- 1974-32 J.D. Talati and J.M. Pandya
Anti-Corros. Method Mater., 21, 7, (1974)
 "Amines As Corrosion Inhibitors For B26S Al in H_3PO_4 "
 The inhibition of corrosion of Al-Cu (4%) alloy B26S in 0.1 N solns of H_3PO_4 (7664-38-2) by different amines.
- 1974-33 S. Terai, Z. Tanabe and M. Hagiwara
Suiyokai-Shi, 18, 80, (1974)
 "Corrosion And Corrosion Control Of Aluminum And Its Alloys. I"
 A review w/46 refs.
- 1974-34 S. Terai, Z. Tanabe and T. Suzuki
Suiyokai-Shi, 18, 80, (1974)
 "Corrosion And Corrosion Control In Aluminum And Its Alloys. II"
 A review w/84 refs is given on cathodic protection of Al, corrosion inhibitors and corrosion protection by surface treatment.
- 1974-35 D.E. Taylor and R.B. Waterhouse
Corros. Sci., 14, 111-22, (1974)
 "Electrochemical Investigation Of Fretting Corrosion Of A Number Of Pure Metals In 0.5M Sodium Chloride"
 Free potential measurement supplemented by transient linear polarization was used to study the effect of fretting corrosion on Zn, Al, Ag, Ta, Cu, Cr, and Ni in 0.5 M NaCl.
- 1974-36 E.D. Verink, Jr.
Chem. Eng., 81, 104,106,108,110
 "Aluminum Alloy For Saline Waters"
 Work at an exptl. desalting plant shows that Al alloys can handle saline water with min. corrosion.

- 1975-1 M. Izuyama
Bosei Kanri, 19, 22, (1975)
"Corrosion Inhibitors For Al And Their Applications"
A review on corrosion inhibitors for Al in acid, basic,
neutral solns and alcohols.
- 1975-2 S.C. Makwana, J.C. Vora and N.K. Patel
Acta Cienc. Indica, 1, 179, (1975)
The effects of some aldehydes on the corrosion of Al AA 3003
in HCl solutions.
- 1975-3 E. Sato and M. Sato
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"Anodic Polarization Behavior And Pitting Corrosion Mechanism
Of Aluminum In NaCl Soln"
Anodic polarization studies of 99.999% Al in 0.5 N NaCl soln
of pH 4,6,8.5,10 and 12.
- 1975-4 J.D. Talati and R.M. Modi
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"Dihydroxy-benzenes As Corrosion Inhibitors For Al-Cu Alloy
In NaOH"
Investigation of dihydroxy-benzenes as corrosion inhibitors
of Al-4% Cu alloys in NaOH.